

a<sup>2</sup>

3. (Amended) The host cell according to claim 1, wherein the heterologous G protein-coupled receptor is modified at an intracellular domain of the G protein-coupled receptor.

6. (Amended) The host cell according to any one of claims 1, 3, or 4, wherein the heterologous G protein-coupled receptor is an orphan receptor.

7. (Amended) The host cell according to claim 1, wherein the heterologous G protein-coupled receptor is modified at amino acid residues Asp-Arg-Tyr in the domain proximal to the second intracellular loop of the G protein-coupled receptor.

8. (Amended) The host cell according to claim 3, wherein the modified G protein-coupled receptor is a human alpha 2A adrenergic receptor and the modification comprises a point mutation of threonine to lysine at amino acid residue 373.

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13. (Amended) A method for screening compounds capable of binding to G protein-coupled receptors, said method comprising (a) subjecting the host cell according to claim 1 to a test compound; and (b) measuring the effect of the test compound on cell growth.

17. (Amended) The host cell according to claim 15, wherein the mutation results in improved coupling between the heterologous G protein-coupled receptor and a heterotrimeric G

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protein or failure of the receptor to interact with cell desensitization or sequestration-internalization machinery, or proper plasma membrane localization.

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26. (Amended) A method for screening compounds capable of binding to G protein-coupled receptors, said method comprising (a) subjecting the host cell according to claims 15, 18, 20, or 21 to a test compound; and (b) measuring the effect of the test compound on cell growth.

*a<sup>6</sup>*

27. (Amended) A method for expressing constitutively active heterologous G protein-coupled receptors in a yeast host cell comprising:

- (a) transforming the host cell with a vector comprising a DNA sequence encoding a modified heterologous G protein-coupled receptor, wherein the modification results in a constitutively active G protein-coupled receptor; and
- (b) culturing the transformed host cell to permit expression of the heterologous G protein-coupled receptor.

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42. (Amended) An isolated DNA molecule encoding a chimeric G alpha protein, wherein the DNA molecule comprises a first nucleic acid sequence encoding the amino terminal domain of a G alpha protein of a first species, and a second nucleic acid sequence encoding the carboxy terminus of a G alpha protein of a second species, which is different from the first species.